REMARKS/ARGUMENTS

This paper is being provided in response to the January 19, 2006 Final Office Action for the above-referenced application. In this response, Applicant has amended the specification to correct minor errors therein, and has amended Claims 181 and 193 in order to clarify that which Applicant deems to be the claimed invention. Applicant respectfully submits that the amendments to the specification do not add new matter. Applicant respectfully submits that the amendments to the claims are all supported by the originally filed application.

Applicant gratefully acknowledges the indication of the allowable subject matter of Claims 186, 198, 202, and 205.

In response to the objection to the specification, Applicant has amended the specification herein in accordance with remarks set forth in the Office Action. In view of the amendments herein to the specification, Applicant respectfully requests that the objection be reconsidered and withdrawn.

The rejection of Claims 181-185, 187-197, and 199-201, 203, 204, and 206-212 under 35 U.S.C. § 102(b) as being anticipated by Bjork et al. (U.S. Patent No. 5,128,619, hereinafter referred to as "Bjork") is hereby traversed and reconsideration thereof is respectfully requested. Applicant respectfully submits that Claims 181-185, 187-197, and 199-210, as amended herein, are patentable over the cited reference.

Applicant's Claim 181, as amended herein, recites a method for detecting an event on a wire comprising: processing a received waveform in accordance with signal propagation

modeling in said wire producing a processed waveform; fitting each of a plurality of functions to a portion of data points representing said processed waveform, wherein each of said plurality of functions is a localized curve fitting of said portion of data points that approximates values of the data points in the portion, said portion of data points including a number of data points in accordance with a selected window size, wherein the data points included in said portion include a designated data point and a specified number of data points relative to said designated data point; and detecting an event using a characteristic of said processed waveform. Claims 182-185, 187-192, 207, 208, and 211 depend from Claim 181.

Applicant's Claim 193, as amended herein, recites a computer program product for detecting an event on a wire comprising: executable code that processes a received waveform in accordance with signal propagation modeling in said wire producing a processed waveform; executable code that fits each of a plurality of functions to a portion of data points representing said processed waveform, wherein each of said plurality of functions is a localized curve fitting of said portion of data points that approximates values of the data points in the portion, said portion of data points including a number of data points in accordance with a selected window size, wherein the data points included in said portion include a designated data point and a specified number of data points relative to said designated data point; and executable code that detects an event using a characteristic of said processed waveform. Claims 194-197, 199, 200, 209, 210 and 212 depend from Claim 193.

Applicant's Claim 201 recites a method for detecting an event on a wire comprising: fitting each of a plurality of functions to a portion of data points representing a received waveform, wherein each of said plurality of functions is a localized curve fitting of said portion

of data points that approximates values of the data points in the portion; determining a characteristic for each of said plurality of functions; evaluating said characteristic of each of said plurality of functions at data points representing said received waveform; and detecting an event using said characteristic of each of said plurality of functions, wherein, if said event indicates a fault condition of said wire, said characteristic is used to identify a type of fault condition.

Applicant's Claim 203 recites a method for detecting an event on a wire comprising: fitting each of a plurality of functions to a portion of data points representing a received waveform, wherein said fitting is a localized curve fitting technique utilized to smooth said data points; determining a derivative for each of said plurality of functions; evaluating said derivative of each of said plurality of functions at data points representing said received waveform; and detecting an event using said derivative of each of said plurality of functions.

Applicant's Claim 204 recites a computer program product for detecting an event on a wire comprising code that: fits each of a plurality of functions to a portion of data points representing a received waveform, wherein each of said plurality of functions is a localized curve fitting of said portion of data points that approximates values of the data points in the portion; determines a characteristic for each of said plurality of functions; evaluates said characteristic of each of said plurality of functions at data points representing said received waveform; and detects an event using said characteristic of each of said plurality of functions, wherein, if said event indicates a fault condition of said wire, said characteristic is used to identify a type of fault condition.

Applicant's Claim 206 recites a computer program product for detecting an event on a wire comprising code that: fits each of a plurality of functions to a portion of data points representing a received waveform, wherein said fitting is a localized curve fitting technique utilized to smooth said data points; determines a derivative for each of said plurality of functions; evaluates said derivative of each of said plurality of functions at data points representing said received waveform; and detects an event using said derivative of each of said plurality of functions.

Bjork relates generally to a system for, and method of, determining cable characteristics, and more specifically to a system for, and method of, determining characteristics of installed cable for digital communications. (Col. 1, Lines 9-12). An incident pulse is transmitted over the communication cable. In response to the incident pulse, a waveform, including any pulses reflected from the cable, is detected. The waveform is digitized into a plurality of time samples. First, second, and third derivatives of each of the time samples are calculated. Each of the time samples are then analyzed to determine whether a significant pulse is included in the waveform. If more than one positive significant pulse or a negative significant pulse is found, the communication cable includes at least one fault which will prevent the operation of the digital communication thereon. (Col. 2, Lines 6-25; Figures 5a and 5b). Bjork discloses a method for determining whether a cable will support digital telephones or communications thereon. The application determines the presence of significant pulses in the waveform in order to determine the location of the end of the cable, the cable attenuation and the presence of bridge taps. With reference to Bjork's Figure 5a, the flowchart thereof includes step 100 for determining the cable impedance and acquiring the waveform in step 101. The waveform is then processed using an

averaging filter in step 102 and the first, second and third derivatives of the time samples are determined in step 104. (Col. 5, Line 67-Col. 6, Line 29; Figure 5a).

Applicant's Claim 181, as amended herein, is neither disclosed nor suggested by Bjork in that Bjork neither discloses nor suggests at least the features of ***a method for detecting an event on a wire comprising: ...fitting each of a plurality of functions to a portion of data points representing said processed waveform, wherein each of said plurality of functions is a localized curve fitting of said portion of data points that approximates values of the data points in the portion, said portion of data points including a number of data points in accordance with a selected window size, wherein the data points included in said portion include a designated data point and a specified number of data points relative to said designated data point;*** ... as set forth in Claim 181. Bjork discloses digitizing a waveform into a plurality of samples, but appears silent regarding any disclosure or suggestion of a selected window size, a designated point, and a number of specified points relative to said designated data point. Accordingly, Bjork neither discloses nor suggests at least the forgoing features of Claim 181.

Claim 193, as amended herein, recites features similar to those pointed out above with respect to Claim 181 which are neither disclosed nor suggested by Bjork. Thus, for reasons similar to those set forth regarding Claim 181, Claim 193 is also neither disclosed nor suggested by Bjork.

Applicant's Claim 201 is neither disclosed nor suggested by Bjork in that Bjork neither discloses nor suggests ***a method for detecting an event on a wire comprising: fitting each of a plurality of functions to a portion of data points representing a received waveform, wherein***

each of said plurality of functions is a localized curve fitting of said portion of data points that approximates values of the data points in the portion; determining a characteristic for each of said plurality of functions; evaluating said characteristic of each of said plurality of functions at data points representing said received waveform; and detecting an event using said characteristic of each of said plurality of functions, wherein, if said event indicates a fault condition of said wire, said characteristic is used to identify a type of fault condition, as recited in Claim 201.

Page 4 of the Office Action states that each polynomial is a localized curve fitting of the portion of data points that approximates values of the data points in the portion is taught by Bjork at Col. 6, line 67-Col. 7, Line 36, where the height of the pulse is estimated using the point where the slope began to become negative – going at the start of the pulse for a 1000ns so the neighborhood of this point is considered to be the portion of the point, and the equation in Col. 7, Line 20 is considered local curve fitting of that portion.

The Office Action relies on the foregoing citation of Bjork as support for disclosing ***fitting each of a plurality of functions to a portion of data points representing a received waveform, wherein each of said plurality of functions is a localized curve fitting of said portion of data points that approximates values of the data points in the portion ...,*** as recited in Claim 201.

The foregoing citation of Bjork relates to step 128 of Bjork's Figure 5b. Bjork discloses further processing in step 130 of Figure 5b where a determination is made as to whether the height of the pulse is greater than an amplitude threshold. If so, control proceeds to step 132

where the second and third derivatives are examined on each point from the pulse's peak location back toward the start of the pulse to determine where the second and third derivatives approximate zero. (Col. 7, Lines 6-36).

Assuming, *arguendo*, that the foregoing citation in Bjork suggests ***fitting each of a plurality of functions to a portion of data points representing a received waveform, wherein each of said plurality of functions is a localized curve fitting of said portion of data points that approximates values of the data points in the portion ...,*** as recited in Claim 201, Applicant's Claim 201 recites an additional processing steps performed using each of the foregoing functions. Applicant's Claim 201 also recites the steps of ***determining a characteristic for each of said plurality of functions; evaluating said characteristic of each of said plurality of functions at data points representing said received waveform; and detecting an event using said characteristic of each of said plurality of functions, wherein, if said event indicates a fault condition of said wire, said characteristic is used to identify a type of fault condition.***

The Office Action relies on a second different citation of Bjork at Col. 2, Lines 12-16 as support for disclosing ***determining a characteristic for each of said plurality of functions; evaluating said characteristic of each of said plurality of functions at data points representing said received waveform; and detecting an event using said characteristic of each of said plurality of functions, wherein, if said event indicates a fault condition of said wire, said characteristic is used to identify a type of fault condition,*** as recited in Claim 201. Applicant respectfully submits that this second citation of Bjork refers to step 104, Figure 5a processing where the first, second and third derivatives of time samples are calculated. The second citation of Bjork neither discloses nor suggests performing <u>any processing</u> using the "functions" of

Bjork's first citation at Col. 6, Line 67-Col. 7, Line 36. Applicant respectfully submits that Claim 201 explicitly recites using the functions from the first determining step in the remaining steps of Claim 201. Bjork makes no such disclosure or suggestion.

For at least these reasons, Applicant respectfully submits that Claim 201 is patentable over Bjork.

Applicant's independent Claims 203, 204 and 206 recite features similar to those of Claim 201 as pointed out above which are neither disclosed nor suggested by Bjork. Thus, for reasons similar to those set forth regarding Claim 201, Applicant's Claims 203, 204 and 206 are also neither disclosed nor suggested by Bjork.

In view of the foregoing, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

Based on the above, Applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 508-898-8604.

Respectfully submitted,
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